



COSTRUZIONE MACCHINE AGRICOLE
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USE AND MAINTENACE BOOK

CHOPPING EMULSIFYING MIXING VERTICAL-AXIS PUMPS SERIES ULTRA



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Data and measures written in this catalogue are approximate and there will be some changes without previous advice.

DODA thanks you for buying an item included in its production range and invites you to read this booklet.

You will find herewith all information necessary for a correct utilisation of the machine you bought; so, please carefully follow the directions contained herewith and read this booklet in all its parts.

Please, also remember to keep this booklet in an adequate place, to preserve it unaltered. The content of this manual can be changed without notice or additional obligations, in order to include changes or improvements to the units already delivered.

No reproduction or translation of any part of this booklet is admitted unless previously authorized.

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1. INTRODUCTION

The machines described in the following "USE AND MAINTENANCE" booklet is a chopping, emulsifying, mixing vertical-axis pump. It consists in a combination of SUPER pumps and Movred bladed units

These pumps are employed for managing thick and/or non-homogeneous manure.

They are provided with the following devices:

- double chopping system realized with blades, counter-blades, rotor, counter-rotor;
- Flow-back pipe enabling the homogenizing of the treated substance by means of a revolving nozzle;
- mixing device for liquid manure disaggregation.

Manufactured in various models with varied performance and power absorption, they are supplied in the following versions: with cardan joint, powered by electric or hydraulic motors.

The galvanised structure, the oil-bath drive system and the high quality of materials used assure the machine high durability and simple maintenance.

From the technological point of view, the concept adopted for all other DODA products has been applied to this machine, too:

" Highest quality to obtain the maximum reliability and durability. "

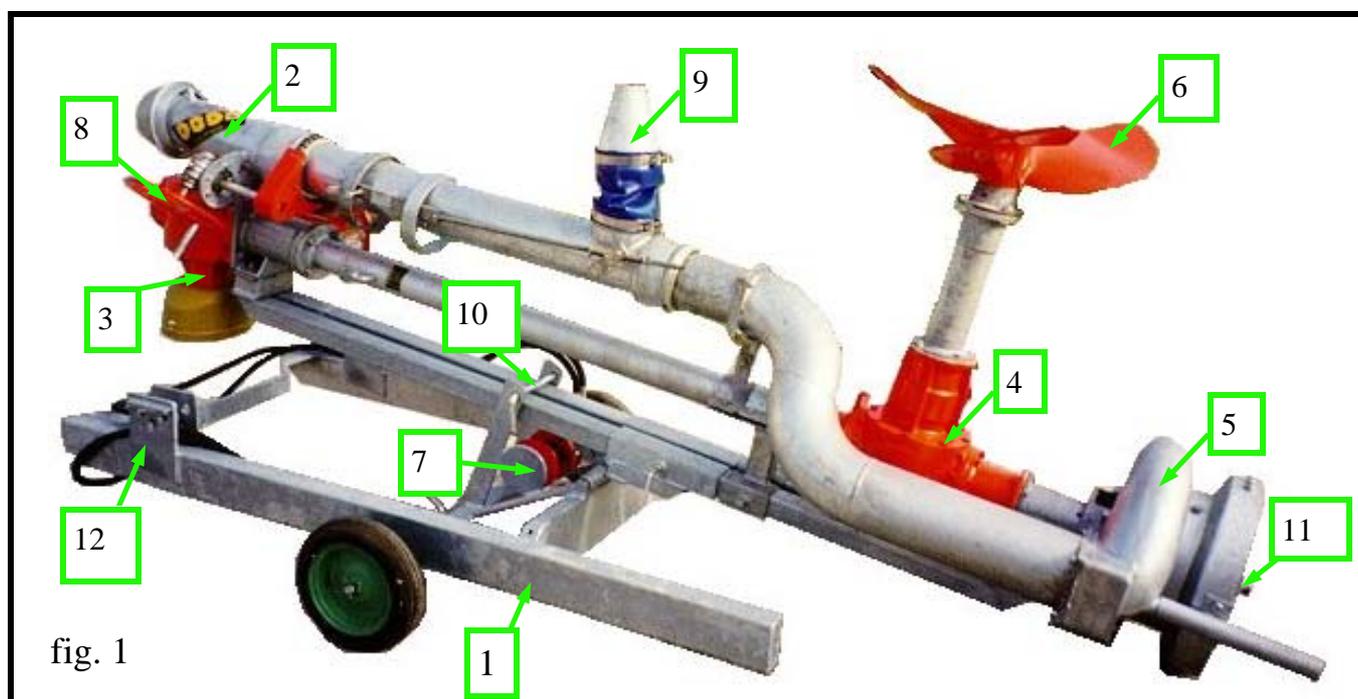
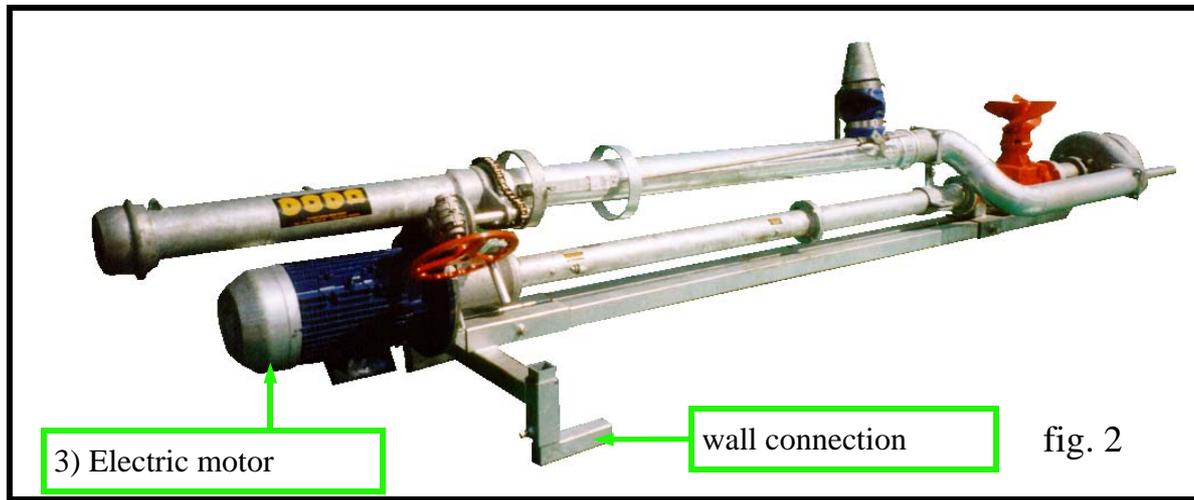


fig. 1

- | | |
|----------------------------------|--------------------------------|
| 1) Trolley for Super 120-150-200 | 7) Manual/ Oleo dynamic winch |
| 2) Output stub pipe | 8) Cone rotation winch |
| 3) Reduction unit | 9) Mixing cone |
| 4) Blades reduction unit | 10) Pump tightening pin |
| 5) Pump body | 11) Chopping blade |
| 6) Mixing device | 12) Tractor lifting connection |



2. MACHINE LOADING AND UNLOADING

The machine loading and unloading operation can be carried out:

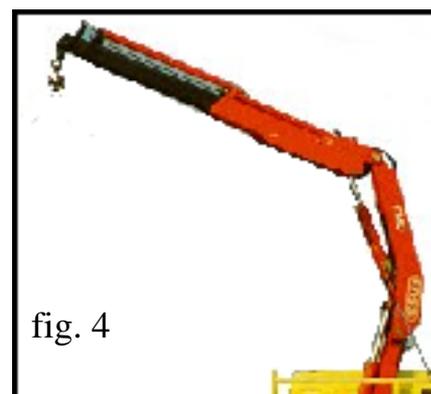
- by means of a lift truck;
- by means of a hoisting crane.

N.B.: the carrying capacity of the sling must be seven times as much as the machine total weight (if it is made of a textile fibre).

WARNING: in either case the machine must not be lifted by catching on the weakest parts of the structure (delivery pipes, etc...).

WARNING : before lifting the structure, be sure that it is well-balanced.

WARNING: never move abruptly or bump stainless steel parts with the forks of the lift truck.



- 1) Check that no component has undergone damages during transportation. If damages have occurred, call your dealer immediately.
- 2) The connection to supply must be carried out according to DODA instructions, by specialised staff (by connecting the cables of the electric motor to the input or the pump to the tractor by means of the Cardan shaft). DODA is in no way responsible for any electric connection, (please follow instructions on the tag on motor as well as on the sticker showing the rotation sense).
- 3) Before starting the machine check that the rotary driving parts are adequately protected, as foreseen by their manufacturer.
- 4) If the protection of a rotary part is not on issue, it must be carried out by the operator in conformity with prevailing law.
- 5) DODA takes no responsibility for modifications altering the characteristics of the machine bought.
- 6) DODA machines must not be installed on structures not consistent with EC safety provisions.
- 7) Before operating the machine it is indispensable to carefully read all directions in the **“Instructions for Use and Maintenance”** booklet. In particular, be sure that you have completely understood the machine operation.
- 8) The machine has been designed and built to treat water and sewage, not for chemical products. Handling these substances can cause permanent damages to this machine.
- 9) Check that the machine length is adequate to the depth of the tank.
- 10) As regards machines with oil-bath driving, the driving pipe as well as the geared units (if presents) must be filled with oil.
- 11) Carefully avoid that machine rubber parts come into contact with oil, grease or oil derivatives.
- 12) For models not provided with disengagement of the mixing unit, operate lever only when the machine is standing.

4. PRELIMINARY CHECKS

Our machines are supplied without lubricating oil either in the driving pipes or in the geared units. Before starting the machine, fill in the lubricating oil:

- unscrew caps: fill with oil and blow air out.
- Pour SAE90 oil **very slowly** see oil quantity on table;
- fill with high-temperature resistant, synthetic oil (ONLY AFI REVERSE GEAR)
- wait at least 3 hours before checking the oil level (ONLY FOR DRIVING PIPES);
- close caps.
- Check the level cap periodically: oil must never be under that level..

N.B. The driving pipe must be vertical during filling and inspection operations

INDICATIVE OIL QUANTITY LEVELS FOR DRIVING PIPE

Pump length (cm)	250	300	350	400	450
Oil quantity (kg)	0.5	3.2	4.7	5.6	6.6

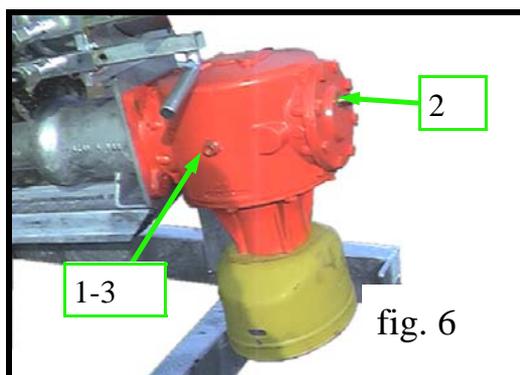
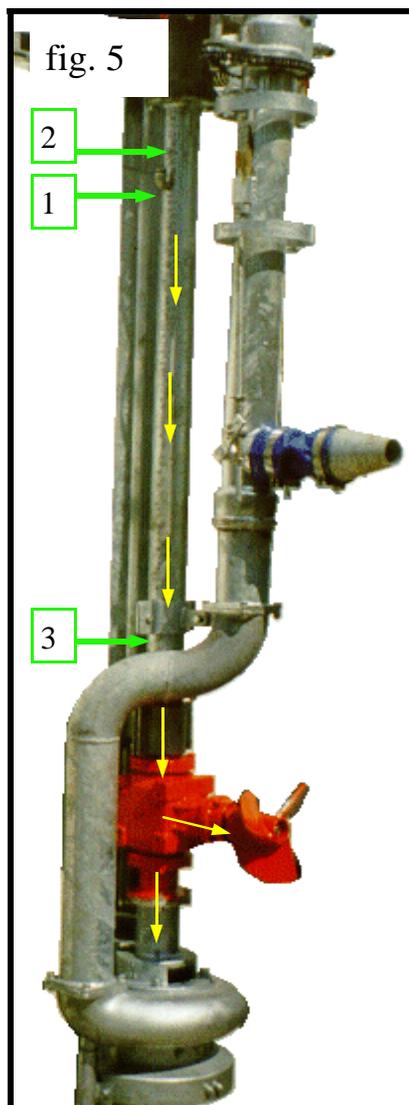
Pump length (cm)	500	550	600	650
Oil quantity (kg)	10.2	11	12.2	13.5

Reduction unit blade	fixed	revolving
Oil quantity (kg)	4	6.7

Pipe blade Ultra	short	long
Oil quantity (kg)	1	2

Reduction unit Super	120	150	200
Quantità olio (kg)	1	3	3

1) Oil fill 2) Oil blow air out 3) Oil level



WARNING: the oil admitted through elbow 1 runs along the whole drive. Pipes and geared units for the mixing bladed unit and connected extensions, if any.

5. POSITIONING AND TRANSPORTATION

pag. 5

N.B.: As far as all machines with Cardan are concerned, connect the Cardan shaft between the tractor power take-off and machine unit. For good functioning, the Cardan shaft must operate on ground level. Also check that the chain, on issue for Cardan-shaft protection, is fastened to the ring.

N.B.: As far as the machines powered by electric motor are concerned, DODA is not responsible for any electric connection (please carefully follow directions on plate on motor as well as on sticker indicating the rotation sense).

N.B.: For transporting the machine on long distances, load it on an proper vehicle by following directions indicated in paragraph “MACHINE LOADING AND UNLOADING”. Never use a tractor for machine transportation on roads

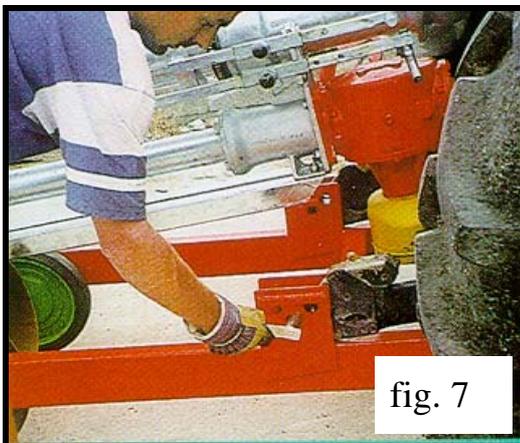


fig. 7

Fasten truck to the tractor lifting device by means of the special pins fig. 7. Back up until the tank edge is reached. Remove wheels fig. 8, lower the tractor lifting device by resting the truck on the tank wall fig. 9. Draw out the machine blocking pin A fig. 9.



fig. 8

Hold the structure of the reduction unit and slowly move it inside the tank fig. 11. Complete immersion is obtained by means of the manual winch, or the oleodynamic winch (available on request) located on the truck fig. 10.

If the tank bottom is reached, lift the machine some centimeters by means of the winch.

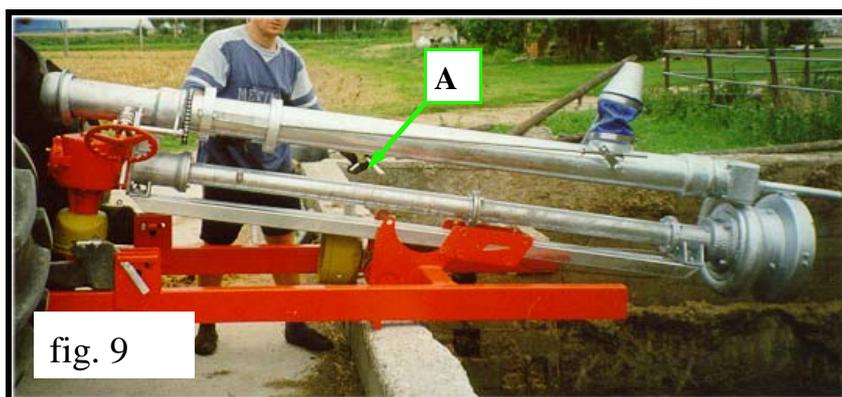


fig. 9

The version with electric motor and wall connection is connected by fig. 12 simply resting the stirrups on the tank wall. Stirrups are adjustable according to tank side thickness.



fig. 10

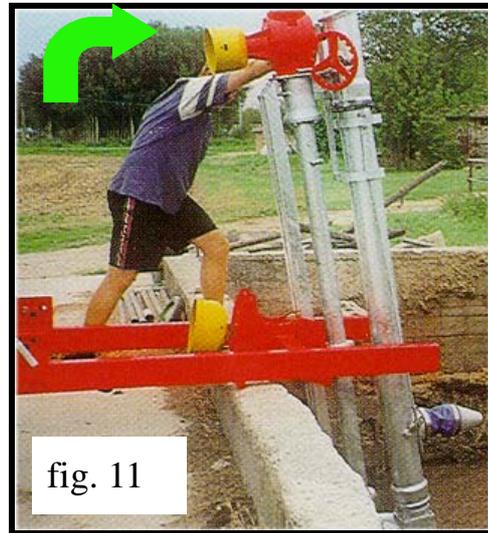


fig. 11

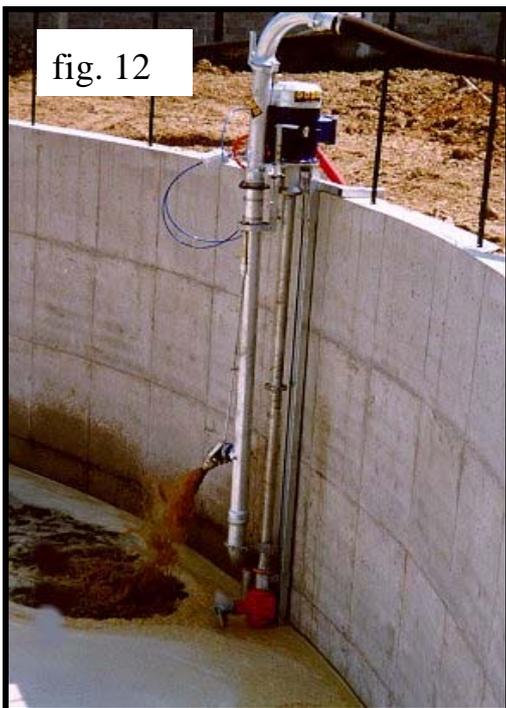


fig. 12

These pumps are normally stationary, but a (manual or electric) winch can be added to them on request for lifting and lowering the pump.

6. WORKING

WARNING: read section “GENERAL INSTRUCTIONS” before starting the machine. After arranging the machine and checking its stability during normal functioning you can start utilising it.

As for all versions provided with an electric motor, after checking the correct rotation sense, connect them to supply

Starting phases:

- start tractor;
- operate the lever engaging the tractor’s power take-off;
- bring tractor to desired speed rate.

Stop phases:

- deactivate the lever engaging tractor's power take-off;
- disconnect the Cardan shaft on the pumping-unit's side A fig. 14 and insert it in place of the winch lever B fig. 14. (NO FOR VERSION WITH HYDRAULIC WINCH)

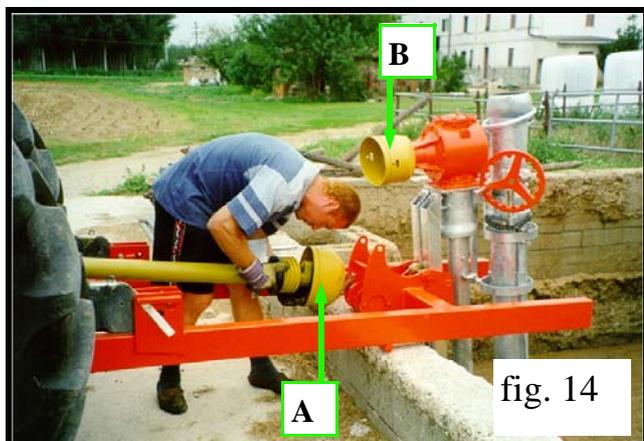


fig. 14

- Start tractor's power take-off to raise the pump about half its length.
- deactivate the lever engaging tractor's power take-off;



fig. 15

- Move tractor forward so that the pump lies on the truck on one side and on the wall's edge on the other fig. 15.

- Conclude pump retrieval by starting tractor's power take-off again. Fasten the pump by means of the special locking pin A fig. 9
- stop tractor's engine;



fig. 16

Output and direction of manure taken-in can be governed by means of special levers fig. 16:

- the first opens and closes the throttle directing liquid manure either towards the cone or towards output pipe; remember to reduce tractor's speed ratio before starting this operation.
- the second directs the manure flow vertically, in case the manure itself comes out of the cone.

Cone rotation is carried out by means of the winch fig. 17 on the output pipe.

WARNING: if the manure is very liquid, some substance could come out of the output pipe during pumping operation, even if the valve is completely closed.

At the same time as the pump is started, the mixing unit comes into operation, too, to loosen the harder product's part. The mixing unit can be oriented along a 120° radius by means of a winch B fig. 18

- To disconnect the propeller (item 6 fig. 1) set lever C fig. 18 on position 2.

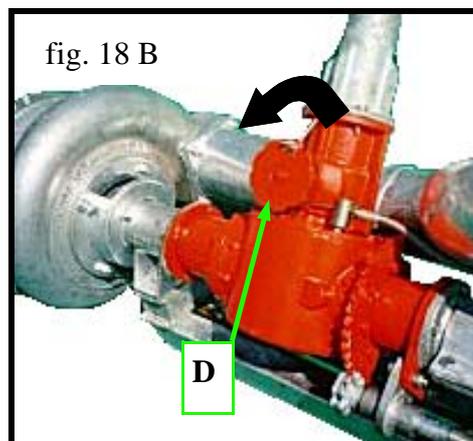
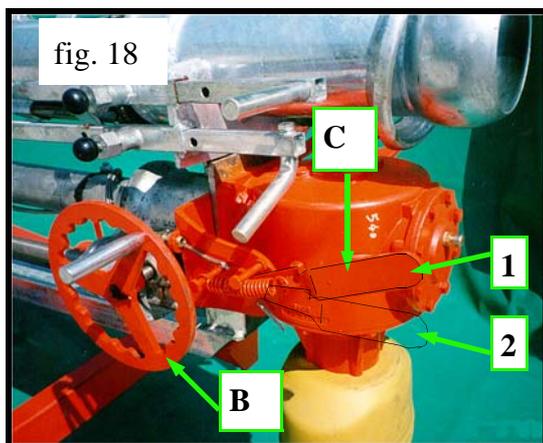
- To re-connect propeller :

- **Stop the tractor and disconnect PTO shaft.**

- Move lever C to position 1 Fig. 18

- Take the pump out of the pit (fig. 15)

- Turn by hand item D as indicated on fig.18B and connect gear by moving a little bit the propeller



7. WORK AND SAFETY RULES

- 1) During machine inspections, in the work as well as in the inspection phases, always wear proper clothing (overalls, gloves, helmet, accident prevention shoes, fastened clothes, etc...).
- 2) The machine must always be utilised well lit.
- 3) Since gases released by liquid manure are poisonous, check that:
 - the work area is adequately ventilated;
 - the machine is not operated in proximity to flames.
- 4) Never inspect the liquid manure tank alone. If you loose your balance or if you feel faint due to fumes, ask for help immediately.
- 5) If you do not need to work in a tank, cover it.

- 6) The machine must be operated by accountable adults, while the place must not be accessible to children.
- 7) Do not carry out operations or regulations when the machine is in motion or when it is connected to supply.
- 8) The machine must only be employed with all protections correctly positioned, following instructions indicated in the previous paragraphs to avoid possible contact with moving parts. Do not damage or remove those protections.
- 9) The machine must never be operated without having filled oil-tank (driving pipes and geared units).
- 10) Before starting work phases, be sure that the whole assembly is stable (machine and tractor).
- 11) During maintenance be sure that the machine is perfectly standing and disconnected from supply.
- 12) The truck must not be used for road-transportation (if any).
- 13) During operation, maintenance or regulation, avoid contact of machine rubber parts (gaskets, etc...) with oil, grease or oil derivatives.
- 14) Be sure that motor rotation is clockwise as indicated by the arrow on the motor (when envisaged).
- 15) As for electrically operated machines, connection must be carried out in a place protected from rainfall.
- 16) If delivery is connected to pipes or hoses, check that the special fastening joints are under perfect conditions; do not halt near them: hazard of bursting and tearing.
- 17) Work and keep the machine in a dry area, protected from rainfall if it is not utilised for a long time.

8. MAINTENANCE

Before carrying out any maintenance operation stop the machine and disconnect it from supply.

- 1) Check the oil level regularly in machine parts requiring lubrication, (driving pipes and geared units) and replace oil completely every 2 years (SAE90).
- 2) Grease rotary parts every 50 working hours (lubricators, piston articulated joints, gear wheels, etc...).
- 3) At the end of its utilisation, wash the machine to prevent liquid manure from solidifying: this would cause damages with time passing.
- 4) Wear conditions of blade and impeller must be checked periodically. Replace them if necessary.

As for all spare parts, address DODA authorized dealers directly.

9. STICKERS

The machine is provided with the following stickers:



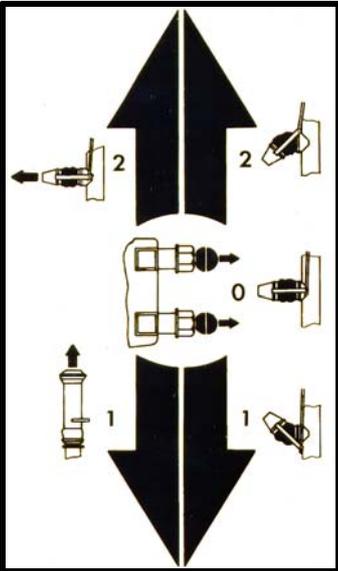
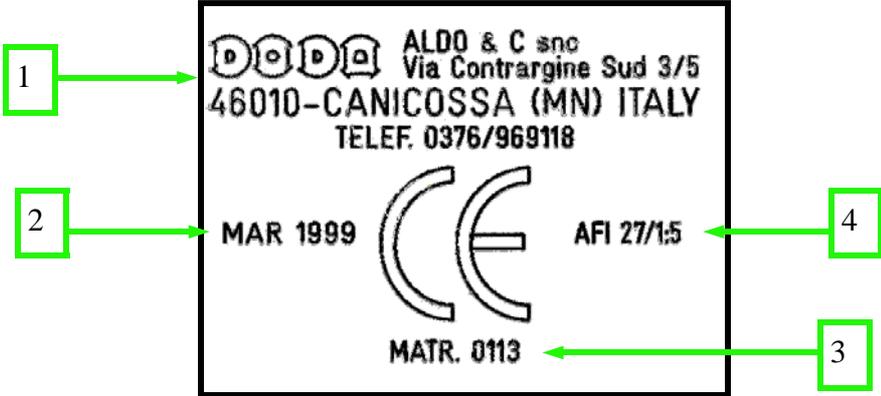
WARNING: fill with oil up to the maximum level before using the machine



OIL LEVEL



THIS STICKER REMINDS YOU TO CHECK THE ROTATION SENSE OF THE MACHINE ELECTRIC MOTOR BEFORE STARTING THE MACHINE.



Sticker consistent with EC rules:

- 1) NAME OF FIRM
- 2) MONTH AND YEAR OF PRODUCTION
- 3) PRODUCT IDENTIFICATION CODE
- 4) TYPE OF MACHINE

OPERATIONS TO BE DONE THROUGH THE LEVERS OF DELIVERY PIPE.

10. PERFORMANCE AND TECHNICAL DATA

The whole structure is hot-galvanised and assure pump duration: the pump needs maintenance very rarely, thanks to its oil-bath drive. The technical features assuring a DODA high reliability are multiple:

- Pump bodies made of nodular cast iron and stainless steel or hot-galvanised metal structural work.
- Pump body shafts made of stainless steel AISI 304
- Impellers made of stainless steel, nodular cast iron, hardened steel.
- Pressed blades made of hardened manganese-vanadium alloy steel.
- Drive-column made of a hot-galvanised. High-resistance mechanic pipe.
- Drive shaft made of a drawn round bar \varnothing 30 with dovetailing in C40
- Oversized multiplier.
- Double oil retainer or (on request) mechanic seal in Widia with Widia.

Mod Pompa Pump mod. Mod. pompe Pumpenmodell	Tubo Uscita (ømm) Outlet pipe (ømm) Tuyau sortie (ømm) Auslab (ømm)	Giri Girante Imperller revolution Tour de la turbine U/des laufrades	Portata (l/min) Capacity Débit Förderleistung	H (m) H (m) H (m) H (m)	HP assorbiti HP absorbet HP absorbés Leistung PS	CV motori e. CV electric motor CV moteurs el. Elektrische no. PS
Super ME 100/7.5	100	1450	2000	7.5	6.5-7	7.5
Super ME 120/12.5 Ultra ME 120/12.5	120	1450	2800	15	10-12	12.5
Super ME 120/15 Ultra ME 120/15	120	1450	3000	18	12-14	15
Super ME 120/20 Ultra ME 120/20	120	1450	3400	22	17-19	20
Super ME 120/25 Ultra ME 120/25	120	1450	3800	24	22-24	25
Super 120	120	1600	4000	25	40-60	-
Super 150 Ultra 150	150	1600	6500	30	60-100	-
Super 200	200	1600	11000	50	80-130	-

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**EC DECLARATION OF CONFORMITY
WITH EC REGULATIONS
EC/89/392 AND SUBSEQUENT MODIFICATIONS**

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DECLARE UNDER OUR OWN EXCLUSIVE RESPONSIBILITY THAT THE
FOLLOWING PRODUCTS,

CHOPPING EMULSIFYING MIXING VERTICAL-AXIS PUMPS SERIES ULTRA

TO WHICH THIS DECLARATION REFERS, ARE CONSISTENT WITH
PROVISIONS CONTAINED IN GUIDELINE EC/ 89/392 AND SUBSEQUENT
MODIFICATIONS.

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